ABSTRACT

Seismic traces of 3D surveys are interpolated using polynomials in 4D space from a less densely sampled real data set of source points $S(x,y)$ and receiver points $R(x,y)$. Input seismic traces should be pre-processed by normal move out (NMO) and static corrections. Input traces contributing to each single interpolated trace are chosen from a selected number of traces closest to each interpolated trace in 4D space. The methodology in accordance with the invention is designed to minimize computational load. The amplitude of an interpolated trace is modeled with a two-term Amplitude vs. Offset (AVO) formulation.